

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Juniperus communis*

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------------|-------------------|---------|----------|---------------------|--|
| 30 | (+)-CATECHIN | Fruit | -- | -- | | |
| 30 | (+)-CATECHIN | Leaf | -- | -- | | |
| 7 | (+)-GALLOCATECHIN | Fruit | -- | -- | | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 38 | (-)-EPICATECHIN | Fruit | -- | -- | | |
| 1 | 3-ALPHA-HYDROXYMANOOL | Leaf | -- | 2350 | | |
| 16 | ACETIC-ACID | Fruit | -- | 9000 | 1.951794238179258 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 10 | ALPHA-AMYRIN | Stem | -- | -- | | |
| 3 | ALPHA-CADINOL | Fruit | -- | -- | | |
| 2 | ALPHA-HUMULENE | Fruit | 19 | 192 | -0.5022919640544935 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 11 | ALPHA-PHELLANDRENE | Fruit | 26 | 300 | -0.4254028775207352 | |
| 11 | ALPHA-PHELLANDRENE | Essential Oil | -- | -- | | |
| 28 | ALPHA-PINENE | Fruit | 530 | 9200 | 1.683156636347073 | |
| 28 | ALPHA-PINENE | Fruit Essent. Oil | -- | -- | | |
| 28 | ALPHA-PINENE | Essential Oil | -- | 336000 | 2.3965523753346103 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------|-------------------|---------|----------|----------------------|--|
| 28 | ALPHA-PINENE | Leaf Essent. Oil | -- | -- | | |
| 3 | ALPHA-SELINENE | Fruit | 21 | 210 | -0.45885866517954543 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 13 | ALPHA-TERPINENE | Fruit | 16 | 640 | 3.1220141023253 | |
| 23 | ALPHA-TERPINEOL | Fruit | 3 | 40 | -0.37559632876532734 | |
| 23 | ALPHA-TERPINEOL | Essential Oil | -- | 2000 | -0.6844703056368032 | |
| 5 | ALUMINUM | Fruit | 19 | 61 | -0.20577518900264186 | |
| 18 | AMENTOFLAVONE | Leaf | -- | -- | | |
| 18 | AMENTOFLAVONE | Plant | -- | -- | | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 101 | APIGENIN | Plant | -- | -- | | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 3 | AROMADENDRENE | Fruit | 2 | 2 | | |
| 3 | AROMADENDRENE | Fruit Essent. Oil | -- | -- | | |
| 112 | ASCORBIC-ACID | Fruit | -- | -- | | |
| 112 | ASCORBIC-ACID | Leaf | 600 | 600 | -0.3882477425426218 | |
| 20 | BENZOIC-ACID | Leaf | -- | -- | | |
| 9 | BETA-AMYRIN | Stem | -- | -- | | |
| 53 | BETA-CAROTENE | Fruit | 4 | 12.2 | -0.1272182489407809 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-------------------|-------------------|---------|----------|---------------------|--|
| 5 | BETA-ELEMENE | Fruit | 10 | 100 | -0.4297005513117395 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 2 | BETA-MYRCENE | Essential Oil | -- | 110000 | -0.2906195438526693 | |
| 3 | BETA-PHELLANDRENE | Fruit | 66 | 660 | -0.3586028887711514 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 3 | BETA-PHELLANDRENE | Leaf Essent. Oil | -- | -- | | |
| 3 | BETA-PHELLANDRENE | Essential Oil | -- | -- | | |
| 3 | BETA-PHELLANDRENE | Fruit Essent. Oil | -- | -- | | |
| 13 | BETA-PINENE | Fruit | 22 | 580 | -0.2792614436195468 | |
| 13 | BETA-PINENE | Essential Oil | -- | 25000 | -0.1752769464817969 | |
| 3 | BETA-SELINENE | Fruit | 32 | 32 | -1 | |
| 3 | BETA-SELINENE | Fruit Essent. Oil | -- | -- | | |
| 47 | BETA-SITOSTEROL | Fruit | -- | -- | | |
| 13 | BETULIN | Fruit | -- | -- | | Jim Duke's personal files. |
| 13 | BETULIN | Leaf | -- | -- | | Jim Duke's personal files. |
| 13 | BETULIN | Stem | -- | -- | | Jim Duke's personal files. |
| 3 | BILOBETIN | Leaf | -- | -- | | |
| 35 | BORNEOL | Plant | -- | -- | | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 35 | BORNEOL | Essential Oil | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|---------------------|-------------------|---------|----------|----------------------|---|
| 12 | BORNYL-ACETATE | Fruit | 2 | 40 | -0.7015317621173582 | |
| 4 | CADINENE | Fruit Essent. Oil | -- | -- | | |
| 4 | CADINENE | Fruit | -- | -- | | |
| 102 | CAFFEIC-ACID | Leaf | -- | -- | | |
| 102 | CAFFEIC-ACID | Fruit | -- | -- | | |
| 28 | CALCIUM | Fruit | 2632 | 8490 | 1.0692774780691343 | |
| 2 | CAMPESTEROL | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 9 | CAMPHENENE | Fruit | 1 | 100 | -0.3103363418182056 | |
| 9 | CAMPHENENE | Fruit Essent. Oil | -- | -- | | |
| 9 | CAMPHENENE | Essential Oil | -- | -- | | |
| 41 | CAMPHOR | Fruit | 1 | 7 | -0.8917009005689489 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 41 | CAMPHOR | Essential Oil | -- | -- | | |
| 31 | CARYOPHYLLENE | Fruit | 12 | 120 | -0.39246549266153086 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 8 | CARYOPHYLLENE-OXIDE | Fruit | 15 | 15 | -0.895044555279303 | |
| 8 | CARYOPHYLLENE-OXIDE | Fruit Essent. Oil | -- | -- | | |
| 1 | CEDRENE | Leaf | 12000 | 36000 | | |
| 3 | CEDROL | Leaf | 450 | 2100 | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-------------------|-------------------|---------|----------|---------------------|--|
| 3 | CEDROL | Wood | 200 | 200 | -1 | |
| 77 | CHLOROGENIC-ACID | Leaf | -- | -- | | |
| 1 | CHOLESTEROL | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 24 | CHROMIUM | Fruit | 1 | 3.2 | -0.0581672201980405 | |
| 18 | CINNAMIC-ACID | Leaf | -- | -- | | |
| 1 | CIS-ACONITIC-ACID | Leaf | -- | -- | | |
| 2 | CIS-COMMUNIC-ACID | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 23 | CITRIC-ACID | Leaf | -- | -- | | |
| 20 | CITRONELLAL | Fruit | 160 | 160 | 1.1325570680400574 | |
| 20 | CITRONELLAL | Fruit Essent. Oil | -- | -- | | |
| 15 | CITRONELLOL | Leaf | -- | -- | | |
| 2 | COBALT | Fruit | 4 | 12.3 | 0.9539136726283711 | |
| 4 | COSMOIIN | Fruit | -- | -- | | |
| 1 | CUPARENE | Wood | 300 | 300 | -1 | |
| 8 | DELTA-3-CARENE | Fruit | 2 | 20 | -0.5797379943407993 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 9 | DELTA-CADINENE | Fruit | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------------|------------|---------|----------|----------------------|--|
| 1 | DELTA-CADINOL | Fruit | 1 | 1 | -1 | |
| 14 | DEOXYPODOPHYLLOTOXIN | Fruit | -- | -- | | |
| 8 | DESOXYPODOPHYLLOTOXIN | Fruit | -- | -- | | |
| 40 | EPICATECHIN | Fruit | -- | -- | | |
| 1 | ETHYL-LAURATE | Fruit | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 1 | ETHYL-MYRISTATE | Fruit | 1 | 6 | -1 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 1 | ETHYL-PALMITATE | Fruit | 1 | 10 | -0.6891827096735466 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 17 | FARNESOL | Leaf | -- | -- | | |
| 4 | FERRUGINOL | Wood | 10 | 10 | | |
| 61 | FERULIC-ACID | Leaf | -- | -- | | |
| 15 | FIBER | Fruit | 120000 | 120000 | -0.20454875292033714 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 13 | FORMIC-ACID | Fruit | 1550 | 5000 | 1 | |
| 8 | FRUCTOSE | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 7 | FUMARIC-ACID | Leaf | -- | -- | | |
| 7 | FUMARIC-ACID | Fruit | 1550 | 5000 | -0.6004154140938881 | |
| 62 | GALLIC-ACID | Leaf | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|-----------------|------------------|---------|----------|---------------------|--|
| 2 | GALLO-TANNIN | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 11 | GAMMA-TERPINENE | Fruit | 19 | 600 | -0.540911166794079 | |
| 11 | GAMMA-TERPINENE | Leaf Essent. Oil | -- | -- | | |
| 5 | GERANYL-ACETATE | Fruit | -- | -- | | |
| 2 | GERMACRENE-D | Fruit | 3 | 32 | 1 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 3 | GINNOL | Fruit | -- | -- | | |
| 7 | GLUCOSE | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 4 | GLUCURONIC-ACID | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 4 | GLYCOLIC-ACID | Fruit | -- | -- | | |
| 7 | HINOKIFLAVONE | Leaf | -- | -- | | |
| 2 | HUMULENE | Fruit | 102 | 102 | -0.6157187427092596 | |
| 6 | IRON | Fruit | 5 | 15 | -0.4679872255679544 | |
| 2 | ISOPIMARIC-ACID | Fruit | -- | -- | | |
| 3 | ISOQUERCETIN | Fruit | -- | -- | | |
| 22 | ISOQUERCITRIN | Leaf | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|------------------|-------------------|---------|----------|---------------------|--|
| 22 | ISOQUERCITRIN | Fruit | -- | -- | | |
| 1 | L-ASCORBIC-ACID | Fruit | -- | -- | | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980. |
| 2 | L-LIMONENE | Bark | -- | -- | | Chemical Constituents of Oriental Herbs (3 diff. books) |
| 7 | LAURIC-ACID | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 1 | LEUCOANTHOCYANIN | Fruit | -- | -- | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 60 | LIMONENE | Fruit | 76 | 910 | -0.6196944860922323 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 60 | LIMONENE | Fruit Essent. Oil | -- | -- | | |
| 60 | LIMONENE | Essential Oil | -- | 31000 | -0.5586333216571333 | |
| 53 | LINALOOL | Plant | -- | -- | | |
| 7 | LINALYL-ACETATE | Plant | -- | -- | | |
| 27 | LINOLEIC-ACID | Plant | -- | -- | | |
| 27 | LINOLEIC-ACID | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 21 | LUPEOL | Stem | -- | -- | | |
| 65 | MAGNESIUM | Fruit | 9 | 30 | -0.9723001521392451 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|------------------|-------------------|---------|----------|----------------------|--|
| 1 | MALONIC-ACID | Leaf | -- | -- | | |
| 14 | MANGANESE | Fruit | 2 | 6.3 | -0.3619961117886394 | |
| 2 | MANOOL | Leaf | -- | 87.5 | | |
| 63 | MENTHOL | Fruit | 22 | 22 | | |
| 63 | MENTHOL | Fruit Essent. Oil | -- | -- | | |
| 22 | MYRCENE | Fruit | 110 | 1800 | -0.10348815985421497 | |
| 22 | MYRCENE | Fruit Essent. Oil | -- | -- | | |
| 22 | MYRCENE | Leaf Essent. Oil | -- | -- | | |
| 5 | MYRTENAL | Fruit | -- | -- | | |
| 5 | MYRTENAL | Fruit Essent. Oil | -- | -- | | |
| 2 | MYRTENOL | Plant | -- | -- | | |
| 3 | N-HENTRIACONTANE | Fruit | -- | -- | | |
| 1 | N-NONACOSANE | Fruit | -- | -- | | |
| 4 | NEPETIN | Leaf | -- | -- | | |
| 10 | NEROL | Fruit | -- | -- | | |
| 10 | NEROL | Fruit Essent. Oil | -- | -- | | |
| 11 | NEROLIDOL | Leaf | -- | -- | | |
| 5 | NERYL-ACETATE | Fruit | 6 | 60 | -0.26098959388736837 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 39 | NIACIN | Fruit | 4 | 12 | -0.6510092608917062 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|------------------------|-------------------|---------|----------|---------------------|--|
| 18 | OLEIC-ACID | Plant | -- | -- | | |
| 18 | OLEIC-ACID | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 9 | OXALIC-ACID | Leaf | -- | -- | | |
| 25 | P-COUMARIC-ACID | Leaf | -- | -- | | |
| 16 | P-CYMENE | Fruit | 48 | 480 | -0.516224768738665 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 16 | P-CYMENE | Fruit Essent. Oil | -- | -- | | |
| 13 | P-HYDROXY-BENZOIC-ACID | Plant | 2500 | 2500 | 1 | |
| 13 | PALMITIC-ACID | Plant | -- | -- | | |
| 13 | PALMITIC-ACID | Fruit | -- | -- | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 2 | PALMITOLEIC-ACID | Seed Oil | -- | -- | | |
| 2 | PALMITOLEIC-ACID | Plant | -- | -- | | |
| 24 | PECTIN | Fruit | 7000 | 7000 | -0.5471395023787067 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 4 | PHELLANDRENE | Fruit Essent. Oil | -- | -- | | |
| 4 | PHOSPHORIC-ACID | Leaf | -- | -- | | |
| 4 | PHOSPHORUS | Fruit | 279 | 900 | -0.7034597256399827 | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|---------------------|-------------------|---------|----------|----------------------|--------------------|
| 14 | POTASSIUM | Fruit | 2967 | 9570 | -0.7384457440468485 | |
| 43 | PROTOCATECHUIC-ACID | Leaf | -- | -- | | |
| 176 | QUERCETIN | Leaf | -- | -- | | |
| 1 | QUINIC-ACID | Leaf | -- | -- | | |
| 1 | RHODOXANTHIN | Leaf | -- | -- | | |
| 15 | RIBOFLAVIN | Fruit | 0.2 | 0.6 | -0.9443248460470646 | |
| 87 | RUTIN | Leaf | -- | -- | | |
| 87 | RUTIN | Fruit | -- | -- | | |
| 5 | SABINENE | Fruit | 172 | 2700 | 0.3124331852362114 | |
| 5 | SABINENE | Fruit Essent. Oil | -- | -- | | |
| 5 | SABINENE | Essential Oil | -- | 76000 | -0.05757229883510122 | |
| 5 | SABINENE | Leaf Essent. Oil | -- | -- | | |
| 3 | SCIADOPITYSIN | Leaf | -- | -- | | |
| 60 | SELENIUM | Fruit | 0.1 | 0.2 | -0.3365919582076448 | |
| 14 | SHIKIMIC-ACID | Leaf | -- | -- | | |
| 4 | SILICON | Fruit | 1.4 | 4.5 | -0.5938225414098025 | |
| 1 | SODIUM | Fruit | -- | -- | | |
| 8 | STEARIC-ACID | Plant | -- | -- | | |
| 7 | SUCCINIC-ACID | Leaf | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------------|---------------------|-------------------|---------|----------|----------------------|--|
| 1 | SUGIOL | Wood | -- | -- | | |
| 6 | SYRINGIC-ACID | Leaf | -- | -- | | |
| 35 | TANNIN | Fruit | 50000 | 50000 | -0.42929897796396493 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 23 | TERPINEN-4-OL | Fruit | 13 | 1050 | -0.19930126187699354 | |
| 23 | TERPINEN-4-OL | Fruit Essent. Oil | -- | -- | | |
| 23 | TERPINEN-4-OL | Leaf Essent. Oil | -- | -- | | |
| 23 | TERPINEN-4-OL | Essential Oil | -- | 21000 | -0.4130918835519973 | |
| 18 | TERPINEOL | Fruit Essent. Oil | -- | -- | | |
| 9 | TERPINOLENE | Fruit | 18 | 320 | 1.3982869520915144 | |
| 9 | TERPINOLENE | Fruit Essent. Oil | -- | -- | | |
| 9 | TERPINOLENE | Essential Oil | -- | -- | | |
| 31 | THIAMIN | Fruit | -- | 1.2 | -0.5290087074554676 | |
| 2 | THUJOPSENE | Wood | 3700 | 3700 | -1 | |
| 4 | TIN | Fruit | 20 | 63 | -0.1301348957872833 | |
| 2 | TRANS-ACONITIC-ACID | Leaf | -- | -- | | |
| 22 | UMBELLIFERONE | Leaf | -- | -- | | |
| 22 | UMBELLIFERONE | Shoot | -- | -- | | |
| 22 | UMBELLIFERONE | Fruit | -- | -- | | |

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|-----------------------|-----------------|-------------------|----------------|-----------------|---------------|---------------------------|
| 24 | VANILLIC-ACID | Leaf | -- | -- | | |
| 5 | VERBENONE | Essential Oil | -- | 2000 | -1 | |
| 2 | WIDDROL | Wood | 100 | 100 | -1 | |
| 1 | YLANGENE | Fruit | -- | -- | | |
| 77 | ZINC | Fruit | -- | -- | | |